

We Claim:

1. A device for demodulating a frequency-modulated signal, comprising:

mixers for converting a frequency-modulated signal into mutually orthogonal components at an intermediate frequency, the orthogonal components defining a first component and a second component;

a polyphase filter having inputs receiving the first component and the second component, said polyphase filter filtering the first component to obtain a first output signal, said polyphase filter filtering the second component to obtain a second output signal;

an additional mixer having an input receiving the first component and another input receiving the second output signal; and

an additional mixer having an input receiving the second component and another input receiving the first output signal.

2. The device according to claim 1, wherein said polyphase filter has a pass-band that is oriented symmetrically with respect to the intermediate frequency.

3. The device according to claim 1, wherein said polyphase filter includes:

a first low-pass filter having an input and an output;

a first amplifier having an input connected to said output of said first low-pass filter, said first amplifier having an output;

a second low-pass filter having an input and an output;

a second amplifier having an input connected to said output of said second low-pass filter, said second amplifier having an output;

a first adder having an input receiving the first component, said first adder having another input connected to said output of said second amplifier; and

a second adder having an input receiving the second component, said second adder having another input connected to said output of said first amplifier.

4. The device according to claim 3, wherein:

said first low-pass filter has a cut-off frequency;

said second low-pass filter has a cut-off frequency;

said first amplifier has a gain factor set to a value formed from a quotient of the intermediate frequency and the cut-off frequency of said first low-pass filter; and

said second amplifier has a gain factor set to a value formed from a quotient of the intermediate frequency and the cut-off frequency of said second low-pass filter.

5. A method for demodulating a frequency-modulated signal, which comprises:

converting a frequency-modulated signal into mutually orthogonal components at a predetermined intermediate frequency;

demodulating the orthogonal components with a demodulator having a demodulator characteristic curve;

orienting the demodulator characteristic curve centrosymmetrically with respect to the intermediate frequency by polyphase filtering the orthogonal components and thereby obtaining polyphase filtered signals; and

for each one of the orthogonal components, mixing the one of the orthogonal components with the one of the polyphase-filtered signals that is obtained from the other one of the orthogonal components.